

Drift Loss-cone Distributions of Electrons in the Jovian  
Synchrotron zone from O6 and VIP4 Models

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Abstract:

Relativistic electrons (10-50 MeV) play an important role to account for the observed synchrotron decimetric radiation in Jupiter's inner radiation belt ( $L < 4$ ). A detailed knowledge of these electron distributions is required to understand the synchrotron emission observations and the associated on-going physical processes. \\

In this paper, instead of assuming electrons drift along constant L-shell at the magnetic equator as many earlier studies adopted, we calculate the size of the theoretical drift-loss cone for relativistic electrons using both the O6 and VIP4 magnetic field models. Model maps of the synchrotron emission for specific electron distributions are shown for comparison.